

slopes can preclude the use of infiltration. Infiltration treatment facilities must be preceded by a pretreatment facility, such as a presettling basin or vault, to reduce the occurrence of plugging. Any of the basic treatment facilities, and detention ponds designed to meet flow control requirements, can also be used for pre-treatment. If an oil/water separator is necessary for oil control, it can also function as the pre-settling basin. However, frequent maintenance to remove settled solids will likely be necessary.

If infiltration is planned, please refer to the General Requirements in Chapter 4. They can affect the design and placement of facilities on your site. For non-residential developments, if your infiltration site is within ¼ mile of a fish-bearing stream, a tributary to a fish-bearing stream, or a lake, please refer to the Enhanced Treatment Menu (Chapter 3, Section 3.4). Read the “Where Applied” paragraph in that section to determine if the Enhanced Treatment Menu applies to part of, or all of the site. If it does apply, read the Note under “Infiltration with appropriate pretreatment” to identify special pretreatment needs. If your infiltration site is within ¼ mile of a phosphorus-sensitive receiving water, please refer to the Phosphorus Treatment Menu (Chapter 3, Section 3.3) for special pretreatment needs.

Note: Infiltration through soils that do not meet the site suitability criteria in Chapter 7 is allowable as a flow control BMP (See Volume III). However, the infiltration facility must be preceded by at least a basic treatment facility. Following a basic treatment facility (or an enhanced treatment or a phosphorus treatment facility in accordance with the previous paragraph), infiltration through the bottom of a detention/retention facility for flow control can also be acceptable as a way to reduce direct discharge volumes to streams and the size of the facility.

If infiltration is practicable, select and apply pretreatment and an infiltration facility.

If infiltration is not practicable, proceed to Step 4.

Step 4: Determine if Control of Phosphorous is Required

Please refer to the plans, ordinances, and regulations identified in Step 1 as sources of information.

The requirement to provide phosphorous control is determined by the local government with jurisdiction, the Department of Ecology, or the USEPA. The local government may have developed a management plan and implementing ordinances or regulations for control of phosphorus from new development and redevelopment for the receiving water(s) of the stormwater drainage. The local government can use the following sources

of information for pursuing plans and implementing ordinances and/or regulations:

- Those waterbodies reported under section 305(b) of the Clean Water Act, and designated as not supporting beneficial uses due to phosphorous;
- Those listed in Washington State's Nonpoint Source Assessment required under section 319(a) of the Clean Water Act due to nutrients.

If phosphorus control is required, select and apply a phosphorous treatment facility. Please refer to the Phosphorus Treatment Menu in Chapter 3 Section 3.3. Select an option from the menu after reviewing the applicability and limitations, site suitability, and design criteria of each for compatibility with the site. You may also use Tables 2.1 through 2.3 as an initial screening of options.

If you have selected a phosphorus treatment facility, please refer to the General Requirements in Chapter 4. They may affect the design and placement of the facility on the site.

Note: Project sites subject to the Phosphorus Treatment requirement could also be subject to the Enhanced Treatment requirement (see Step 5). In that event, apply a facility or a treatment train that is listed in both the Enhanced Treatment Menu and the Phosphorus Treatment Menu.

If phosphorus treatment is not required for the site, proceed to Step 5.

Step 5: Determine if Enhanced Treatment is Required

Enhanced treatment is required for:

Industrial project sites,
Commercial project sites,
Multi-family project sites, and
Arterials and highways Urban roads with expected Average Daily Traffic (ADT) counts greater than 7,500; or a rural road or freeway with expected ADT greater than 15,000

that discharge to fish-bearing streams, lakes, or to waters or conveyance systems tributary to fish-bearing streams or lakes. However, such sites listed above that discharge directly (or, indirectly through a municipal storm sewer system) to Basic Treatment Receiving Waters (Appendix V-A), and Areas of the above-listed project sites multifamily, industrial and commercial project sites that are identified as subject to Basic Treatment requirements (see Step 6) are also not subject to Enhanced Treatment requirements. For developments with a mix of land use types, the

| Table 2.2 Ability of Treatment Facilities to Remove Key Pollutants^{(1) (3)} | | | | | | |
|---|-----|------------------|------|------------------|-----------------------|--------------|
| | TSS | Dissolved Metals | Soap | Total Phosphorus | Pesticides/Fungicides | Hydrocarbons |
| Wet Pond | Ω | + | | + | ± | + |
| Wet Vault | Ω | | | ± | ± | ± |
| Biofiltration | Ω | + | | ± | + | + |
| Sand Filter | Ω | + | | + | ± | +Ω |
| Constructed Wetland | Ω | Ω | Ω | | Ω | Ω |
| Compost Filters | Ω | + | | | Ω | Ω |
| Infiltration ⁽²⁾ | Ω | | | Ω | + | +Ω |
| Oil/Water Separator | ± | | | ± | ± | Ω |
| Footnotes: Ω Major Process + Minor Process (1) Adapted from Kulzer, King Co. (2) Assumes Loamy sand, Sandy loam, or Loam soils (3) If neither a Major or Minor Process is shown, the Treatment Facility is not particularly effective at treating the identified pollutant | | | | | | |

| Table 2.3 Screening Treatment Facilities Based on Soil Type | | | |
|--|--------------|-----------|---|
| Soil Type | Infiltration | Wet Pond* | Biofiltration* (Swale or Filter Strip) |
| Coarse Sand or Cobbles | 6 | 6 | 6 |
| Sand | 4 | 6 | 6 |
| Loamy Sand | 4 | 6 | 4 |
| Sandy Loam | 4 | 6 | 4 |
| Loam | 6 | 6 | 4 |
| Silt Loam | 6 | 6 | 4 |
| Sandy Clay Loam | 6 | 4 | 4 |
| Silty Clay Loam | 6 | 4 | 4 |
| Sandy Clay | 6 | 4 | 4 |
| Silty Clay | 6 | 4 | 6 |
| Clay | 6 | 4 | 6 |

Notes:

4 Indicates that use of the technology is generally appropriate for this soil type.

6 Indicates that use of the technology is generally not appropriate for this soil type

* Coarser soils may be used for these facilities if a liner is installed to prevent infiltration, or if the soils are amended to reduce the infiltration rate.

Note: Sand filtration is not listed because its feasibility is not dependent on soil type.